

In the Claims:

Cancel claims 1-14 and add claims 15-28.

1-14. (Canceled)

15. (New). A method of repeated joint tempering of reaction samples in at least two steps, which are repeatedly carried out consecutively as sequences of steps, in assigned specified temperature ranges, the method comprising the steps of:

bringing, in an arbitrary selected first step of a sequence of steps, several first groups of samples containing each at least one sample to temperatures within a first temperature range assigned to the arbitrary selected first step, which are the same within each of the first groups and are different between the first groups;

effecting one of

(i) bringing, in an arbitrary selected second step of the sequence of steps, in case a reaction product is affected by the first and second steps with regard to identical evaluation parameters, at least two samples of the least one of the first group, which belong to two different second groups, to temperatures within a second temperature range assigned to the arbitrary

selected second step, which are the same within each of the second groups and different between the second groups and

(ii) in case the reaction product is affected by the first and second steps with regard to different evaluation parameters, bringing at least two arbitrary samples, which belong to two different third groups, to temperatures within the second temperature range assigned to the arbitrary selected second step, which are the same within each of the third groups and are different between the third groups; and

repeatedly carrying out the first and second steps consecutively as the sequence of steps.

16. (New). The method of claim 15, wherein, in the case the reaction product is affected by the first and second steps with regard to the different evaluation parameters, all samples of each third group are contained in a respective first group or all samples of each first group are contained in a respective third group.

17. (New). The method of claim 15, wherein, in the case the reaction product is affected by the first and second steps with regard to the identical evaluation parameters, all samples of all of the second groups belong to different respective first groups.

18. (New). The method of claim 15, wherein, in case of carrying out all of the steps of the sequence, the samples are brought groupwise to different temperatures in an assigned temperature range.

19. (New). The method of claim 15, wherein only one of at least one of the first, second, and third groups contains several samples.

20. (New). The method of claim 19, wherein groups, which contain several samples, contain those of other groups which, in their assigned temperature range, are in vicinity of a middle temperature.

21. (New). The method of claim 15, wherein the samples are disposed in an array of rows and columns.

22. (New). The method of claim 21, wherein the rows and the columns are disposed orthogonally to one another.

23. (New). The method of claim 21, wherein all samples of each group of the first, second, and third groups are arranged in a row or in a column.

24. (New). The method of claim 21, wherein the third groups form partial regions of the array, which enclose, with their regional boundaries, only samples of the same third group.

25. (New). A method of repeated tempering of reaction samples in at least three steps, which are repeatedly carried out consecutively as sequences of steps, in assigned specified temperature ranges, the method comprising the steps of:

bringing, in an arbitrary selected first step of a sequence of steps, several first groups of samples containing each at least one sample to temperatures within a first temperature range assigned to the arbitrary selected first step, which are the same within each of the first groups and are different between the first groups;

bringing, in an arbitrary selected second step of the sequence of steps, at least two samples of the least one in the first group, which belong to two different second groups, to temperatures within a second temperature range assigned to the arbitrary selected second step which are the same within each of the second groups and different between the second groups;

bringing in an arbitrarily selected third step of the sequence of steps, at least two samples of at least one of the first groups and at least one of the second groups, which belong to different third groups, to temperatures within third temperature range assigned to the third step,

which are the same within the third groups and different between the third groups; and

repeatedly carrying out the steps consecutively by a sequence of steps.

26. (New). The method of claim 25, wherein the samples are disposed three-dimensionally and temperature gradients are applied in X, Y and Z directions for producing different temperatures for three steps.

27. (New). The method of claim 25, wherein the samples are disposed in a plane.

28. (New). The method of claim 27, wherein, in the first step, the surface is divided with a first center line into two first partial areas, in which, in each case, identical temperature gradients are applied in opposite directions perpendicularly to the first center line, and wherein, in the second step, the surface is divided with a second center line, which is perpendicular to the first center line, into two second partial areas, in which, in each case, identical temperature gradients are applied in opposite directions perpendicularly to the second center line, and wherein, in the third step, different temperatures are applied in the four quadrants of the surface, which are formed by the first and second center lines.